National Institute of Environmental Health Sciences

Hidden climate change - Urban meteorology and the scales of real weather

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Abstract:

This paper discusses the scale at which the weather is experienced and modified by human activities in urban environment. The climates of built-up areas differ from their non-urban counterparts in many aspect: wind-flows, radiation, humidity, precipitation and air quality all change in the presence of human settlement, transforming each city into a singularity within its regional weather system. Yet this pervasive category of anthropogenic climate change has always tended to be hidden and difficult to discern. The paper first describes the sequence of discovery of the urban heat island since the early nineteenth century, and the emergence and consolidation of a scientific field devoted to the climatology of cities. This is followed by a discussion of various attempts to apply knowledge of climatic factors to the design and management of settlement. We find that real-world application of urban climatology has met with limited success. However, the conclusion suggests that global climate change gives a new visibility and practical relevance to urban-scale climate science.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Meteorological Factors, Precipitation, Solar Radiation, Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation, Mitigation

Resource Type:

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified